Manifest: The Planned Release of a New Intermediate Wheatgrass Cultivar

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Intermediate Wheatgrass Pros and Cons:

Advantages:

✓ **High Yield and Quality**

✓ **Easy Establishment**

Disadvantages:

✓ **Short Stand Longevity Especially under Grazing**

The Northern Great Plains Research Laboratory and the Bismarck Plant Materials Center are planning to release 'Manifest' Intermediate Wheatgrass.

Manifest has shown an improved ability to persist under grazing.

Production Information for Manifest:

✓ **Yield of Manifest is comparable to other cultivars (See Table 1 for a Regional Comparison).**

✓ **Quality of Manifest is lower than other cultivars but still provides reasonable forage quality (See Table 2 to compare Manifest's quality with other cultivars).**

✓ **When grazed, Manifest demonstrated higher shoot replacement ratios than other cultivars (Figure 1). This should allow Manifest to have longer stand longevity under grazing.**

Manifest Intermediate Wheatgrass growing at the Bismarck Plant Materials Center.

Table 2. Crude protein (CP) and *in vitro* dry matter digestibility (IVDMD) for different intermediate wheatgrass cultivars at Mandan, ND (2 yr) and Mead, NE (4 yr).

	Mandan, ND		Mead, NE	
Entry	IVDMD	CP	IVDMD	CP
	----------%----------			
Manifest	**62.3**	**6.9**	**65.1**	**9.1**
Reliant	63.2	8.1	66.0	9.5
Manska	63.6	7.5	66.3	9.7
Oahe	61.2	7.5	64.1	8.9
Greenar	62.5	6.9	64.6	9.4
Beefmaker	63.9	8.1	66.5	9.3
Haymaker	63.2	7.5	65.1	9.4
Mean	**62.8**	**7.5**	**65.4**	**9.3**

Manifest has:

✓ **The high yield and quality traditionally found in intermediate wheatgrass.**

✓**Increased persistence under grazing which should enhance stand longevity.**

Table 1. Average dry-matter yields of intermediate wheatgrass cultivars in a cooperative regional trial. (2001-2003, also 2000 at Mead NE)

	Location/ (Number of years)						
Entry	Mandan, ND (3)	Miles City, MT (3)	Mead, NE (4)	Sidney, NE (3)	Blue Creek, UT (3)	Green Canyon, UT (3)	Mean (19)
	----------Pounds/Acre----------						
Manifest	**4614**	**1409**	**9708**	**3215**	**1729**	**3406**	**4611**
Reliant	4867	1295	8738	3162	1192	3365	4214
Manska	4206	1396	7774	3076	1361	3783	3931
Oahe	4864	990	8466	3355	1506	2706	4405
Greenar	3843	1170	8101	2907	1873	3762	4071
Beefmaker	4505	1537	9163	3253	1125	2682	3924
Haymaker	4422	1369	8996	3091	1116	3152	4161
Mean	**4474**	**1310**	**8654**	**3151**	**1415**	**3265**	**4150**

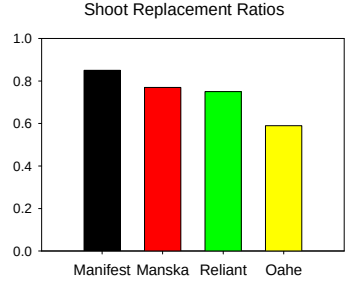

Figure 1. Shoot replacement ratios for Manifest compared to other common intermediate wheatgrass cultivars. The higher the shoot replacement ratio, the more persistent a cultivar is under grazing.

Manifest is the latest in a line of several intermediate wheatgrass cultivars released by the Northern Great Plains Research Laboratory and the Bismarck Plant Materials Center. These include the popular Manska and Reliant cultivars.

The Bismarck Plant Materials Center established a foundation seed production field of Manifest in 2006 with an expected seed harvest in July 2007.

Plans are for Manifest to be commercially available for pasture, hayland and other conservation uses in 2010.